

**REMARKS**

The instant Office Action was mailed July 14, 2004. Claims 3-6 and 9-11 are pending and were rejected.

**I. Claim Rejections Under 35 U.S.C. § 112**

Claim 9 is rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. The Examiner states that that claim 9 does not describe the screw which remains stationary as it moves rubber from a feed end to a discharge end. As such, the Examiner states the claim contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor had possession of the claimed invention when the application was filed. Claim 9 has been amended such as it no longer contains the word “stationary.” Applicant further states that the term “stationary” was defined in the previous amendment as having rotation without reciprocating movement. Applicant respectfully contends that this rejection is now moot.

**II. Claim Rejections Under 35 U.S.C. § 103**

The Examiner rejected claims 3-6 and 9-11 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 3,445,890 to McCormick et al., in view of U.S. Patent Number 4,981,364 to Geyer. The Examiner states that McCormick teaches all elements recited in claim 9 with the exception of holding the screw stationary during the feeding operation. Applicant respectfully traverses the rejection.

**Prima facie case of obviousness not established**--Through the decisions of the CCPA and the Court of Appeals for the Federal Circuit, certain well-established principles of claim construction and review have been developed. If these principles are not met, a prima facie case of obviousness under 35 U.S.C. § 103 has not been established and the claim in issue should be allowed. The undersigned respectfully suggests that these tests are not met by the prior art in this case and a prima facie case of obviousness has not been established. These tests will be briefly applied to the individual claims rejected by the proposed combination.

Claim 9

**A. Geyer teaches away from the present invention.**

Claim 9 has been amended to state that the “screw and screw nose rotate about a central axis without reciprocating movement in said cylindrical barrel.” This finds support in the subject application on page 2, lines 23, 24; page 3, line 15; and Figure 3. This claim amendment renders Geyer moot because Geyer teaches away from this amendment. More specifically, Geyer states “the apparatus has the extruder discharge coming from a stationary screw-like rotor, thereby obtaining a smooth extrusion free from the ‘blip’ caused by a rotating screw end.” See Geyer, column 7, lines 39-43. As claimed in claim 9, the screw nose rotates. As such, Geyer teaches away from the present invention.

**B. All claim limitations must be considered.**

35 U.S.C. § 103 requires that the subject matter as a whole be reviewed. There are certain limitations of claim 9, which are still not shown in the combination proposed by the Examiner. According to 35 U.S.C. § 103, it must be considered and given proper weight if the correct result is to be reached.

For example, McCormick does not teach that pressure on the rubber is maintained in the transition space. Rather, because the flow channel maintains it constant diameter and does not taper as in the present invention, and more specifically as claimed in claim 10, pressure cannot be maintained in the transition space of McCormick because the diameter of the cylindrical barrel remains constant rather than tapered. In fact, the geometry of McCormick suggests that pressure decreases after it passes the screw nose because of the larger area.

Claim 10

The Examiner stated with respect to claim 10, the phrase “to maintain working engagement of said material...to prevent expansion of volatiles in said material” is interpreted as a statement of intended use and bears no weight during examination. Claim 10 has been amended to state that the rubber is spaced from an opposing tapered wall of said flow channel “for maintaining working engagement of said rubber....” (emphasis added) This language was acceptable in claim 9, and it is respectfully proffered that it would also be acceptable in claim 10.

With respect to claim 10, the Examiner states that Geyer teaches an extruder flow channel having a tapered wall that opposes a conical surface of a screw nose. As such, it allegedly would have been obvious to one of ordinary skill in the art at the time the invention was made to replace McCormick's flow channel head with Geyer's tapered channel head in order to cause less turbulence in the flow of the molding material as it moves to the die. Applicant respectfully contends that the configuration of the present invention is distinguishable from the flow channel head in Geyer. In Geyer, the screw nose is upstream of the tapered surface of the flow channel. As such, it is impossible for the screw nose in Geyer to maintain the rubber in working engagement with the conical surface of the screw nose and the tapered wall of the flow channel head. Further, because of the configuration of Geyer, pressure is not maintained on the rubber to prevent expansion of the volatiles in the rubber. Once rubber passes the screw nose of Geyer, pressure decreases because of the increased volume in the extruder. As such, it teaches directly against the problem that the present invention solves. This very problem is discussed in the subject application on page 3, lines 20-28. For the foregoing reasons, Applicant respectfully contends that claim 10 is distinguishable over the cited reference and is now in condition for allowance.

#### Claim 11

Claim 11 depends from claim 10. Claim 11 has also been amended to state that the rubber is spaced from an opposing tapered wall of said flow channel "for maintaining working engagement of said rubber...." Applicant contends that this limitation should be given weight during examination. Further, claim 11 requires that the "flow channel have a generally constant cross sectional area from said tapered wall of said flow channel head to a discharge end of said flow channel head for maintaining pressure on said rubber and for providing time for volatiles in said material to be dissolved before ejection from said flow channel head." Applicant respectfully contends that because of the configuration of Geyer, the cross sectional area of the flow channel does not remain constant as required in claim 11. This is for the same reason articulated above in that the cross sectional area increases, as well as the volume, because the screw nose in Geyer is upstream from the transition space. Because none of the cited references

teach or suggest maintaining a constant cross sectional area from the tapered wall of the flow channel head to a discharge end of the flow channel head, it is respectfully contended that claim 11 is in condition for allowance and is patentably distinct from the cited references.

Claims 3, 4, 5, and 6

Claims 3-6 depend directly or indirectly from independent claim 9, which is in condition for allowance. As such, applicant respectfully contends that since claim 9 is now in condition for allowance, claim 3-6 are patentably distinct from the cited references.

**CONCLUSION**

In response to the Office Action dated July 14, 2004, claims 9, 10, and 11 have been amended pursuant to 37 C.F.R. 1.121. It is believed these amendments have placed the amended claims in conformance with the requirements of the Office Action. At this point, applicant believes that the claims remaining in the case distinguish over the art cited and comply with the requirements of 35 U.S.C. § 102, § 103, and § 112. As such, allowance of the claims is respectfully requested.

Respectfully submitted,

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